

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
Cape Fear: Elizabethtown, N. C.-----	Feet 22	5	6	Feet 22.7	6
MISSISSIPPI DRAINAGE					
Mississippi:					
Quincy, Ill.-----	14	26	27	14.1	26
Hannibal, Mo.-----	13	24	29	14.3	27
Louisiana, Mo.-----	12	25	29	13.2	12
Illinois:					
Morris, Ill.-----	13	9	13	18.2	10
Peru, Ill.-----	14	8	(1)	19.8	11
Henry, Ill.-----	7	8	(1)	13.7	23-24
Peoria, Ill.-----	16	10	(1)	21.0	24
Havana, Ill.-----	14	12	(1)	19.0	25
Beardstown, Ill.-----	12	(2)	(1)	19.1	28-29
Pearl, Ill.-----	12	24	(1)	15.7	30
Neosho:					
Oswego, Kans.-----	17	7	7	17.3	7
North Canadian:					
Woodward, Okla.-----	4	14	14	4.5	14

¹ Continued at end of month.

² Continued from last month.

MEAN LAKE LEVELS DURING AUGUST, 1924

By UNITED STATES LAKE SURVEY

(Detroit, Mich., Sept. 4, 1924)

The following data are reported in the "Notice to Mariners" of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during August, 1924:				
Above mean sea level at New York.....	Feet 601.65	Feet 579.62	Feet 572.16	Feet 246.04
Above or below—				
Mean stage of July, 1924.....	+0.26	+0.10	-0.29	-0.17
Mean stage of August, 1923.....	-0.34	-0.13	+0.47	+0.63
Average stage for August last 10 years.....	-1.00	-1.19	-0.46	-0.34
Highest recorded August stage.....	-2.28	-3.89	-1.65	-2.22
Lowest recorded August stage.....	+0.05	-0.13	+0.78	+1.69
Average relation of the August level to—				
July level.....		-0.1	-0.2	-0.3
September level.....		+0.2	+0.2	+0.4

¹ Lake St. Clair's level: In August, 1924, 574.83 feet.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS—AUGUST, 1924

551.5:633(73) By J. B. KINCER

General summary.—The first 10 days of August were on the whole, rather favorable for farm interests in Central and Northern States east of the Rocky Mountains. There was considerable rainfall in some sections where drought had prevailed, especially in the western Great Plains, parts of the Ohio Valley, and middle Atlantic area, and the increased moisture was beneficial for growing crops. It continued too cool for warm-weather crops, however, in the Central-Northern States, while frequent rainfall in that area caused considerable interruption to farm work. It had become dry in the south Atlantic districts, and drought continued in the central and west Gulf areas, where all crops suffered severely. Fine growing weather prevailed in the lower Missouri Valley and in the southern Great Plains.

The second decade of the month was too cool for best growth in the interior States; decidedly so in most of the Ohio Valley. Crops made fairly good growth, however, in the central Great Plains and lower Missouri Valley, where there was sufficient moisture and an abundance of sunshine. They showed material improvement dur-

ing this period in the Middle and North Atlantic States, by reason of the increased soil moisture, but at the same time it continued generally dry in the South.

The last decade of the month brought much warmer weather to the interior valleys and Northern States, which was very beneficial to growing crops, though more moisture was needed locally. Late vegetation showed continued improvement in the Northwestern States as a result of better growing conditions, but at the close of the month it was again getting dry. Severe drought persisted in the Great Basin, and droughty conditions in the South were intensified by the continued absence of moisture. Most crops suffered, especially gardens, truck, and late corn.

Wheat.—Spring wheat matured rapidly during the first few days of the month under generally favorable weather conditions. There was considerable infection of wheat by black stem rust in North Dakota, but the bulk of the crop was too near maturity for material damage. Harvest made good progress and was rushed in North Dakota to avoid rust damage. Fairly good advance was made in threshing winter wheat during the first half of the month, although there was some delay by frequent rains in the upper Mississippi Valley. The last half was rather unfavorable for threshing in the western Lake region, the upper Mississippi Valley, and northern Great Plains, because of frequent rainfall, with considerable damage reported to grain in shock.

Corn.—Conditions, in general, were rather unfavorable for corn during the first three weeks of the month, because of persistently cool weather from the central valley States northward. Growth was good, however, in the Plains States and fairly satisfactory in the lower Missouri Valley. In the South, late corn suffered severely from the dry weather. Corn was 10 days to as much as 3 weeks late in most of the principal producing area, and warm weather was badly needed to hasten maturity. The last 10 days of the month, however, had generally warmer weather throughout the central and northern portions of the country, and the corn crop responded nicely to the improved temperature conditions. Splendid progress toward maturity was reported in the central Great Plains States. There was some deterioration in Ohio and parts of Kentucky because of insufficient moisture.

Cotton.—There was considerable rainfall the first part of the month in the northern portions of the Cotton Belt, including northern and northwestern Texas, and progress of the crop was mostly fair to very good in those regions. Moisture was needed in other portions of the belt where the advance was less satisfactory. During the second decade rainfall was of a local character, and moisture continued insufficient in many sections, though there were beneficial rains in parts of the Mississippi Valley States, and good local showers in the western portion of the belt.

The progress and condition of cotton continued very good in the extreme western and northwestern portions of Texas, but were generally poor elsewhere because of the drought, with bolls small in the dry areas and opening prematurely. There were sufficient showers to be beneficial in Oklahoma the latter part of the month, but rain was generally needed, with progress of cotton ranging from fair in the north to poor in the south. Dryness prevented satisfactory growth in the central States of the belt, with some deterioration reported. The drought was partially relieved by irregular showers in Georgia the latter part of the month, but most sections continued dry and cotton showed further deterioration, while the drought

was intensified in the Carolinas, especially South Carolina, with increased shedding and progressive deterioration in most places.

Potatoes and truck.—The generally cool weather and mostly ample soil moisture made conditions favorable for potatoes in Central and Northern States, though it was somewhat too dry in the upper Ohio Valley. Late truck was unfavorably affected by dry weather throughout the Southern States, but showed improvement in the middle Atlantic area by reason of better moisture conditions.

Pastures and livestock.—Pastures were poor throughout the month in the Southern States, but improved in the middle and north Atlantic areas, and were mostly in good condition for the season in the central valleys and Great Plains. Rain was needed for the range in New Mexico and stock water was scarce in parts of the central Rocky Mountain area. Ranges and pastures suffered for moisture in the more western States, but livestock did very well generally.

WEATHER DURING THE CROP-GROWING SEASON OF 1924

The weather during the crop-growing season of 1924 in Central and Northern States east of the Rocky Mountains was characterized, on the whole, by coolness and, during much of the time, by frequent rains. There was at no time a serious lack of moisture in these sections, although more was needed during a part of the season in some local areas, particularly in portions of the Ohio Valley and in the Middle Atlantic States. The season was, in general, too cool for good growth of warm-weather crops, but those preferring cool weather, such as the small grains, potatoes, and hardy truck, did well. There was too much rain in many localities which interfered considerably with farm operations, particularly in the upper Mississippi and lower Missouri Valleys, and crops were generally late in maturing, especially corn.

Rainfall was mostly above normal, with frequently too much moisture, in the Southeast until August, when droughty weather prevailed and all vegetation suffered considerably. Temperatures during the three summer months ranged above normal in this area. In the central and west Gulf sections the season was characterized by dryness and temperatures above the normal. The most serious deficiency in moisture anywhere east of the Rocky Mountains occurred in this area. While limited areas in the principal agricultural sections east of the Rocky Mountains had insufficient moisture during the season, no extensive and damaging drought prevailed, except in the west Gulf States. West of the Rocky Mountains, however, the entire season was characterized by deficient moisture, and most unirrigated crops suffered. High temperatures and the absence of the usual amount of rainfall demanded heavy irrigation, with resulting inadequate water supply in many districts.

Small grains.—The weather and soil conditions during the fall of 1923 were favorable for seeding, germination, and early growth of fall-sown grains. Moisture was unusually abundant in the western portion of the Winter Wheat Belt, and the mild fall was favorable for the establishment of a good root system before winter set in. Consequently, the wheat crop came through a rather severe winter in the western portion of the belt with but little harm. There was considerable damage by winterkilling, however, in parts of the Ohio Valley States. The spring months were cool, moist,

and favorable for wheat, while unusually good weather for filling and ripening prevailed, which largely offset the effect of the winter freezes in the eastern portion of the belt.

Spring wheat got a rather poor start, because of the late season, but the cool, moist weather later favorably affected development in the principal producing areas and a generally good crop was harvested. There was considerable infection by black stem rust in some sections, especially in North Dakota, but the disease developed too late to materially reduce the yield. West of the Rocky Mountains both spring and winter wheat were seriously harmed by insufficient moisture. Oat seeding was greatly delayed in the North, because of wet weather, but later this crop showed steady improvement, due to favorable temperature and moisture conditions, and a satisfactory yield was obtained in most districts.

Corn.—The weather was decidedly unfavorable for planting corn and for germination during May in the principal producing States, being much too cool generally and too wet from the Mississippi Valley eastward. Planting was much delayed, so that considerable corn remained unplanted until after the 10th of June. In the Great Plains the weather permitted seeding about the usual date. The summer months were too cool and, in many places, too wet for corn from the upper Mississippi Valley eastward, resulting in poor cultivation and much complaint of grassy fields. Conditions were more favorable in the central Great Plains and lower Missouri Valley, and by the end of August a good to excellent early crop had matured in Oklahoma and was fast approaching maturity in eastern Kansas. In the upper Mississippi and Ohio Valleys corn was generally two to three weeks late.

Cotton.—The cool, wet weather during March was unfavorable for cotton planting and at the end of that month seeding was very backward, and the germination of the early seeded in more southern districts was poor. April was more favorable and planting made fairly good progress, although it continued too cool and wet in the northern portion of the belt. May was too cool generally, with too much rain in northern districts; the month, on the whole, was decidedly unfavorable.

Early in June there was a reaction to higher temperatures and that month, in general, had moderately warm weather, with less rainfall, which brought improvement to cotton, although the hot, dry weather the latter part of the month was unfavorable in the west Gulf section. The first half of July had too much rain in the eastern portion of the belt, but the latter half was more favorable. Drought continued from the lower Mississippi Valley westward and rainfall was badly needed. August had deficient rainfall throughout the belt, except in local areas, principally in the northern portion.

Truck, pastures, and miscellaneous crops.—The season was favorable for potatoes, hardy truck, and pastures quite generally east of the Rocky Mountains, except in the central and west Gulf areas, but was less favorable for sweet potatoes in the Southeast. It was rather unfavorable for tobacco and peanuts. Sugar beets grew well, but there was insufficient moisture in the Gulf sections for sugar cane. In central and eastern districts there was very little spring frost damage to fruit, but in the more northwestern States this crop suffered serious harm from frost.